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# The Commonwealth of Massachusetts

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## ANNUAL REPORT

OF THE

# COMMISSIONER OF AGRICULTURE

FOR THE

Year Ending November 30, 1939



# The Commonwealth of Massachusetts

## DEPARTMENT OF AGRICULTURE

*To the Honorable Senate and House of Representatives:*

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1939, for the Department of Agriculture.

Respectfully submitted,

WILLIAM CASEY, *Commissioner.*

### PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—WILLIAM CASEY, SPENCER.

*Executive Secretary to the Commissioner*—MICHAEL J. CARROLL.

### ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

STUART L. LITTLE, NEWBURY, Term expires November 30, 1939.

GEORGE A. WELLS, WORCESTER, Term expires November 30, 1939.

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1940.

JAMES O'BRIEN, LEE, Term expires November 30, 1940.

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1941.

HERBERT N. SHEPARD, WARREN, Term expires November 30, 1941.

### DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, MARK H. GALUSHA, WILLIAMSTOWN.

DAIRYING AND ANIMAL HUSBANDRY—*Director*, LESTER T. TOMPKINS, ESSEX.

MARKETS—*Director up to October, 1939*, GEORGE O'BRIEN, BRAINTREE; *Director from October, 1939*, LOUIS A. WEBSTER, BLACKSTONE.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, ROBERT F. CROSS, OSTERVILLE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

### STATE RECLAMATION BOARD

*Chairman*, DANIEL J. CURRAN, MARLBOROUGH

EDWARD WRIGHT, DEDHAM

ROBERT F. CROSS, OSTERVILLE

*Secretary*, GEORGE R. STRATTON, HOPKINTON

### REPORT OF THE COMMISSIONER

Agriculture in Massachusetts continues to be an important industry with a cash farm income from marketing and government payments of more than \$73,000,000. The farmers of Massachusetts have concentrated on specialized farming and have produced maximum crops on available land. In the past year the cash income has increased on the following crops: potatoes and truck crops, pears, grapes, cranberries, small fruit, other fruit crops, maple sugar and miscellaneous crops (including forest, nursery and greenhouse). Our tobacco crop has shown less cash farm income, but there remains a large part of the 1939 crop which has not been sold, and sale of this carry-over at prevailing prices will give the tobacco crop a substantial increase over the 1938 cash farm income.

In a large part, our \$73,437,000 income to Massachusetts farmers results from the sale of dairy products at a value of \$24,763,000 and this amount is \$1,000,000 greater than 1938. Prices for poultry products during 1939 were lower than during any year for the past five years, and while the production of eggs increased in Massachusetts, the value of poultry and eggs dropped approximately \$3,000,000.

Massachusetts has exceptional market outlets and all farmers have a large consuming center within a radius of twenty-five miles in which to market

fresh farm products. Grading laws have been passed by our Legislature that give the progressive farmer an opportunity to pack, grade and mark his products on the basis of quality, and gives the consumer adequate protection in the purchase of such graded products. We have a primary market in Metropolitan Boston with an approximate population of 2,000,000 and six secondary markets with populations in excess of 100,000 consumers.

Several types of market outlets play an important part in the sale of local farm products:

1. Municipal markets. Municipal markets have been established in several of our largest industrial centers, including Boston. The farmers arrive early in the morning and find a convenient place for the truck or wagon in the market place. There is no charge for the space. Farm products are quickly disposed of to wholesale houses, commission men, jobbers, or retail establishments and the farmers return home in time to start another day.

2. Farmer-owned or operated markets. Farmers in the vicinity of some of our larger secondary markets have rented or purchased land for a market place and charge a nominal rental to farmer members. This type of market has excellent opportunities for co-operative effort. The success of these market outlets depends to a great extent upon the character of management and leadership.

3. Roadside markets. The farming sections of Massachusetts are fortunate in having the best of hard surface roads passing through the production areas. Roadside markets are operated by farm owners on many of these main highways, and the Department of Agriculture inspects and supervises a substantial number of these markets. It is expected that the number of roadside markets will increase from year to year and the consumer will be able to purchase local farm products with both the owner's guarantee of freshness and quality and the Department of Agriculture's mark of approval based on frequent inspection.

4. Chain stores. The chain stores have shown a tendency during the past few years to offer our Massachusetts farmers a cash market for local farm products. Co-operative effort among the farmers will be necessary to obtain the volume that big chain stores need, and this marketing trend gives hopeful assurance to certain commodity groups that are now struggling with burdensome surpluses.

#### LEGISLATION

During the legislative season of 1939 special attention was given to every possible means of obtaining greater economy in the functioning of State Departments. With this thought in mind it was considered advisable to consolidate the Divisions of Reclamation, Soil Survey and Fairs and the Division of Plant Pest Control into one division, namely: the Division of Plant Pest Control and Fairs. This change was accomplished by the enactment of Chapter 405, Acts of 1939.

Another matter that was given serious consideration by the farm organizations in this Commonwealth was the possible transfer of the activities of the Milk Dealers Bonding Law to the Milk Control Board. It was thought that the work connected with bonding of milk dealers was closely associated with the work of the Milk Control Board and that a closer co-ordination of these two groups would result in more economical and more effective service for the dairy farmers of Massachusetts. Under the provisions of Chapter 421 of the Acts of 1939 this change was effective and while the responsibility of the bonding law continues with the Commissioner of Agriculture, the immediate supervision of bonding activities is under the Administrator of the Milk Control Board.

#### REPORTS OF DIVISIONS

The following detailed reports of the various divisions of the department give a brief description and explanation of important functions that were carried on during the past year:

## REPORT OF THE DIVISION OF LIVESTOCK DISEASE CONTROL

The report of the work of this Division for the year ending November 30, 1939, is submitted herewith.

On January 25 Mark H. Galusha of Williamstown was appointed to succeed Charles F. Riordan as Director of the Division.

No serious outbreak of disease over which this Division has control occurred in animals during the year.

The prevalence of tuberculosis in cattle, as revealed by the tuberculin test, was further reduced from the low percentage of 1938—namely, forty-nine hundredths of one per cent—to forty hundredths of one per cent.

There has been a marked reduction in the number of cases of rabies reported—namely, 38—the smallest number for any like period for the last forty years.

The anticipated reappearance of encephalomyelitis in horses, epidemic in extent, did not materialize.

### BOVINE TUBERCULOSIS

The work of tuberculin testing of all cattle in the Commonwealth regardless of age continued as in the past years. A total of 22,704 herd tests, 232,443 animal tests were made, as compared with 23,370 herd tests, 226,325 animal tests in 1938—a decrease in the number of herd tests, but an increase in the number of head tested.

The finding of reactors in herds supposedly tuberculosis-free—so-called “breaks”—continues to be a serious problem which requires careful attention and study. Nine hundred twenty-eight (928) head of cattle reacted, as compared with 1,122 in 1938—.4% of the total number tested, 232,443—the smallest number of reactors and a lower percentage than at any time since tuberculin testing under the accredited herd plan for the eradication of tuberculosis was started in the year 1922. Of the 928 reactors, 224, or 24.13%, were reported at time of slaughter as showing no visible lesions of tuberculosis. Seven (7) were condemned at time of slaughter as unfit for food, due to extensive lesions of tuberculosis.

One thousand twenty-nine (1,029) herds and 3,236 head of the total of 22,704 herds and 232,443 head are recorded as first tests, indicating original tests for the person or persons under whose name the tests were conducted.

Testing, as in previous years, was conducted in cooperation with the United States Department of Agriculture, Bureau of Animal Industry. The following tabulation is a summary of the work by veterinarians in tuberculin testing for the year:

	<i>Herds</i>	<i>Head</i>	<i>Reactors</i>
Veterinarians paid by the State on an annual salary basis . . . . .	7,008	70,138	206
Veterinarians paid by the State on a per diem basis . . . . .	12,149	127,044	531
Veterinarians paid by the owners . . . . .	52	1,295	1
Veterinarians paid by the Federal Government	3,495	33,966	190
	<hr/> 22,704	<hr/> 232,443	<hr/> 928

TUBERCULIN TESTS BY MONTHS—1939

FIRST TESTS	CLEAN				WITH REACTORS							
	Tested				Tested				Reacted			
	Herds	P. B.	Gd.	Total	Herds	P.B.	Gd.	Total	P.B.	Gd.	Total	
1938												
December	75		234	234								
1939												
January	81	16	238	254	1		6	6		1	1	
February	91	10	186	196	2	43		43		4	4	
March	131	24	362	386	2	51		51		2	2	
April	97	12	324	336	2	3		3		2	2	
May	121	6	348	354	1	15		15		2	2	
June	83		221	221	3	18		18		3	3	
July	65	15	174	189	1	1		1		1	1	
August	39		122	122								
September	55	2	153	155								
October	125	10	479	489								
November	66	11	289	300								
Total ..	1,029	106	3,130	3,236	12		137	137		15	15	

RETESTS	CLEAN				WITH REACTORS							
	Tested				Tested				Reacted			
	Herds	P. B.	Gd.	Total	Herds	P.B.	Gd.	Total	P.B.	Gd.	Total	
1938												
December	2,037	2,997	21,572	24,569	32	66	1,596	1,662	8	75	93	
1939												
January	2,438	2,833	21,844	24,677	40	114	969	1,083	1	82	83	
February	2,208	2,711	22,209	24,920	53	73	1,399	1,472	12	90	102	
March	2,447	3,183	22,850	26,033	41	96	1,992	2,088	3	118	121	
April	2,444	3,589	23,197	26,786	60	26	1,418	1,444	1	95	96	
May	2,081	2,476	21,398	23,874	46	219	1,505	1,724	17	96	113	
June	1,383	450	10,160	10,610	15	13	257	270		26	26	
July	723	369	4,322	4,691	7	10	240	250		38	38	
August	718	307	3,798	4,105	5	5	148	153		6	6	
September	1,235	374	9,548	9,922	12	8	280	288	2	34	36	
October	2,160	1,650	17,102	18,752	51	62	1,543	1,605	7	77	84	
November	1,395	2,184	14,833	17,017	32	126	949	1,075	43	82	125	
Total ..	21,269	23,123	192,833	215,956	394	818	12,296	13,114	94	819	913	

TOTAL	TESTS				REACTORS		
	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total
1938							
December	2,144	3,063	23,402	26,465	8	75	83
1939							
January	2,560	2,963	23,057	26,020	1	83	84
February	2,354	2,794	23,837	26,631	12	94	106
March	2,621	3,303	25,255	28,558	3	120	123
April	2,603	3,627	24,942	28,569	1	97	98
May	2,249	2,701	23,266	25,967	17	98	115
June	1,484	463	10,656	11,119		29	29
July	796	394	4,737	5,131		39	39
August	762	312	4,068	4,880		6	6
September	1,302	384	9,981	10,365	2	34	36
October	2,336	1,722	19,124	20,846	7	77	84
November	1,493	2,321	16,071	18,392	43	82	125
Total ..	22,704	24,047	208,396	232,443	94	834	928



## TUBERCULIN TESTS BY COUNTIES—1939

FIRST TESTS	CLEAN				WITH REACTORS							
	Tested				Tested				Reacted			
	Herds	P.B.	G.d.	Total	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total	
Barnstable	28		43	43								
Berkshire	111	13	500	513			2	2		2	2	
Bristol ...	117	1	352	353	3		61	61		3	3	
Dukes ....	7	11	13	24								
Essex ....	74	4	235	239	1		15	15		2	2	
Franklin ..	71		158	158								
Hampden ..	91	4	236	240								
Hampshire ..	40	8	166	174								
Middlesex ..	139	6	367	373	1		14	14		1	1	
Nantucket ..	2		2	2								
Norfolk ...	75	5	152	157	2		4	4		2	2	
Plymouth ...	75	12	231	243								
Suffolk ....												
Worcester ..	199	42	675	717	3		41	41		5	5	
Total ...	1,029	106	3,130	3,236	12		137	137		15	15	

RETESTS	CLEAN				WITH REACTORS							
	Tested				Tested				Reacted			
	Herds	P.B.	G.d.	Total	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total	
Barnstable	492	94	1,766	1,860	2		43	43		2	2	
Berkshire ..	1,744	2,939	21,590	24,529	34	19	823	842	2	49	51	
Bristol ...	2,367	2,375	19,296	21,671	59	67	1,186	1,253	5	98	103	
Dukes ....	123	22	722	744								
Essex ....	1,488	1,861	13,258	15,119	29	49	2,045	2,094		44	44	
Franklin ..	1,902	2,081	19,403	21,484	6	9	106	115	3	18	21	
Hampden ..	1,787	1,483	13,706	15,189	17	141	443	584	10	27	37	
Hampshire ..	1,931	2,888	17,366	20,254	13	141	186	327	1	15	16	
Middlesex ..	2,344	2,227	21,026	23,253	47	22	1,682	1,704		101	101	
Nantucket ..	38	11	405	416								
Norfolk ...	987	1,500	8,631	10,131	30	12	914	926		49	49	
Plymouth ...	1,513	1,182	10,765	11,947	47	118	2,043	2,161	8	134	142	
Suffolk ...	20	75	119	194								
Worcester ..	4,533	4,385	44,780	49,165	110	240	2,825	3,065	65	282	347	
Total ...	21,269	23,123	192,833	215,956	394	818	12,296	13,114	94	819	913	

TOTAL	TESTS				REACTORS		
	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total
Barnstable .....	522	94	1,852	1,946		2	2
Berkshire .....	1,891	2,971	22,915	25,886	2	51	53
Bristol .....	2,546	2,443	20,895	23,388	5	101	106
Dukes .....	130	33	733	768			
Essex .....	1,592	1,914	15,553	17,467		46	46
Franklin .....	1,979	2,090	19,667	21,757	3	18	21
Hampden .....	1,895	1,628	14,385	16,013	10	27	37
Hampshire .....	1,984	3,037	17,718	20,755	1	15	16
Middlesex .....	2,531	2,255	23,089	25,344		102	102
Nantucket .....	40	11	407	418			
Norfolk .....	1,094	1,517	9,701	11,218		51	51
Plymouth .....	1,635	1,312	13,039	14,351	8	134	142
Suffolk .....	20	75	119	194			
Worcester .....	4,845	4,667	48,321	52,988	65	287	352
Total .....	22,704	24,047	208,396	232,443	94	834	928

COUNTY INFECTION  
STATUS OF HERDS ON NOVEMBER 30, 1939, 1938, 1937

1939	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable .....	526	1,909			
Berkshire .....	2,088	26,649	16	336	26
Bristol .....	2,479	21,364	9	224	23
Dukes .....	139	801			
Essex .....	1,509	14,602	5	127	7
Franklin .....	1,978	20,943	1	19	1
Hampden .....	1,879	15,315	2	23	4
Hampshire .....	1,977	20,250			
Middlesex .....	2,556	23,902	10	233	13
Nantucket .....	39	416			
Norfolk .....	1,056	9,182	6	59	7
Plymouth .....	1,490	11,181	10	560	20
Suffolk .....	21	182			
Worcester .....	4,817	49,648	36	854	160
Total .....	22,554	216,344	95	2,435	261

1938	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable .....	557	1,939			
Berkshire .....	2,107	25,935	7	200	21
Bristol .....	2,536	20,977	7	91	12
Dukes .....	138	751			
Essex .....	1,567	13,964	10	673	25
Franklin .....	2,016	20,609			
Hampden .....	1,935	15,070	2	19	2
Hampshire .....	2,082	20,099	7	217	15
Middlesex .....	2,574	23,468	12	381	24
Nantucket .....	41	414			
Norfolk .....	1,067	8,953	4	41	6
Plymouth .....	1,612	10,988	4	79	4
Suffolk .....	22	175			
Worcester .....	4,941	49,399	18	480	37
Total .....	23,195	212,741	71	2,181	146

1937	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable .....	572	1,909			
Berkshire .....	2,153	26,194	3	64	9
Bristol .....	2,590	20,454	9	163	12
Dukes .....	143	703			
Essex .....	1,614	13,924	11	843	28
Franklin .....	2,050	20,590			
Hampden .....	1,958	14,866	4	102	14
Hampshire .....	2,152	19,633	4	149	7
Middlesex .....	2,645	23,054	8	151	39
Nantucket .....	45	452			
Norfolk .....	1,079	8,842	1	141	4
Plymouth .....	1,620	10,453	4	88	23
Suffolk .....	22	176			
Worcester .....	5,008	48,951	25	549	41
Total .....	23,651	210,201	69	2,255	177

AUCTION SALES									
	Head	PUREBREDS		AUCTION SALES		GRADES		Head	Total Amount
		Amount	Average	Amount	Average	Amount	Average		
December, 1938	9	\$1,345.00	\$149.33	74	\$7,100.00	\$95.95	83	\$8,445.00	\$101.75
January, 1939	1	90.00	90.00	82	8,320.00	101.45	83	8,410.00	101.33
February	12	1,815.00	151.08	94	10,005.00	106.44	106	11,820.00	111.51
March	3	560.00	186.67	120	13,320.00	111.00	123	13,880.00	112.85
April	1	145.00	145.00	97	9,850.00	101.55	98	9,995.00	101.99
May	17	2,800.00	164.70	98	10,590.00	109.08	115	13,490.00	117.30
June	—	—	—	29	2,910.00	100.34	29	2,910.00	100.34
July	—	—	—	39	4,850.00	124.36	39	4,850.00	124.36
August	—	—	—	6	555.00	92.50	6	555.00	92.50
September	2	200.00	100.00	34	3,690.00	108.53	36	3,890.00	108.06
October	7	1,170.00	167.14	76	7,697.50	101.28	83	8,667.50	106.84
November	43	7,410.00	172.33	82	9,406.00	114.63	125	16,810.00	134.48
Total, 1939	95	\$15,535.00	\$163.52	821	\$88,387.50	\$106.36	926	\$103,922.50	\$112.23
Total, 1938	71	\$11,015.00	\$155.14	1,040	\$102,722.50	\$98.77	1,111	\$113,737.50	\$102.37

## SALVAGE

	Head	PUREBREDS		SALVAGE		GRADES		Head	TOTAL	
		Amount	Average	Head	Amount	Amount	Average		Amount	Average
December, 1938	9	\$276.90	\$30.77	74	\$2,865.60	\$38.72	83	\$3,142.50	\$37.86	
January, 1939	1	26.25	26.25	83	3,400.07	40.96	84	3,426.32	40.79	
February	12	422.65	35.22	94	3,845.72	40.91	106	4,268.37	40.27	
March	3	138.47	46.16	120	4,839.99	40.33	123	4,978.46	40.64	
April	1	32.50	32.50	97	3,881.18	40.01	98	3,913.68	39.94	
May	17	711.81	42.26	98	4,203.14	42.89	115	4,914.95	42.74	
June	—	—	—	29	1,074.74	37.06	29	1,074.74	37.06	
July	—	—	—	39	1,487.15	38.13	39	1,487.15	38.13	
August	—	—	—	6	200.64	33.88	6	200.64	33.88	
September	2	81.00	40.50	34	1,222.07	35.94	36	1,303.07	36.20	
October	7	241.95	34.56	76	2,512.74	33.06	83	2,754.69	33.21	
November	43	1,495.75	34.78	82	2,887.28	35.21	125	4,383.03	35.06	
Total, 1939	95	\$3,427.28	\$35.02	832	\$32,420.32	\$38.96	927	\$35,847.60	\$38.67	
Total, 1938	74	\$2,809.16	\$39.18	1,038	\$37,356.09	\$35.99	1,112	\$40,255.25	\$36.21	

## INDEMNITY

	Head	PUREBREDS		INDEMNITY		GRADES		Head	TOTAL	
		Amount	Average	Amount	Average	Amount	Average		Amount	Average
December, 1938	9	\$529.06	\$58.78	72	\$2,033.57	\$28.24	81	\$2,562.63	\$31.64	
January, 1939	1	31.88	31.88	82	2,500.04	30.49	83	2,531.92	30.51	
February	12	687.51	57.29	88	2,901.55	32.97	100	3,589.06	35.89	
March	3	210.76	70.25	119	4,218.93	35.45	122	4,429.69	36.01	
April	1	56.25	56.25	93	2,860.05	30.75	94	2,916.30	31.02	
May	17	1,034.66	60.86	96	3,091.26	32.20	113	4,125.92	36.51	
June	—	—	—	29	917.66	31.64	29	917.66	31.64	
July	—	—	—	39	1,644.29	42.16	39	1,644.29	42.16	
August	—	—	—	6	177.19	29.53	6	177.19	29.53	
September	2	59.50	29.75	34	1,228.54	36.13	36	1,288.04	35.78	
October	7	426.78	60.97	76	2,581.40	33.97	83	3,008.18	36.24	
November	42	2,689.35	64.03	81	3,199.58	39.50	123	5,888.93	47.88	
Total, 1939	94	\$5,725.75	\$60.91	815	\$27,354.06	\$33.56	909	\$33,079.81	\$36.28	
Total, 1938	71	\$4,090.52	\$57.61	907	\$30,605.25	\$33.74	978	\$34,695.77	\$35.48	



## INTERSTATE MOVEMENT OF CATTLE

The full effect of the law (Chapter 168, Acts of 1938), by which cattle transported into the Commonwealth, if intended for dairy purposes, must have been negative to an agglutination blood test for Bang's abortion disease, is shown by the decrease in the number of cattle received interstate this year at both the quarantine station at Brighton and points other than Brighton, the first full year of operation under said law—namely, a grand total this year of 21,637, as compared with 24,513 for the year 1938.

## QUARANTINE STATION AT BRIGHTON

The following tabulation is a record of receipts and disposition of dairy cattle at Brighton for the year 1939:

ORIGIN		DISPOSITION		
			<i>Inter-</i> <i>state</i>	<i>State</i> <i>Total</i>
Maine . . . . .	4,319			
New Hampshire . . . . .	1,116			
New York . . . . .	1	Connecticut . . . . .	4	—   4
Rhode Island . . . . .	4	Massachusetts . . . . .	5,444	2,132   7,576
Vermont . . . . .	1,192	New Hampshire . . . . .	4	—   4
		Rhode Island . . . . .	1,179	6   1,185
	6,632	Slaughtered . . . . .	1	—   1
Massachusetts . . . . .	2,138			
			6,632	2,138   8,770
	8,770			

As a means of checking the accuracy of the blood tests as reported on certificates which accompanied the cattle arriving at Brighton, agglutination blood tests were conducted at frequent intervals throughout the year by drawing samples from cattle consigned by the different owners and arriving from the several states. The findings obtained have not always proven as satisfactory as should be expected, a fact which is being given careful consideration and study.

There were also received for slaughter at the Brighton station the following diseased cattle:

	<i>Conn.</i>	<i>Mass.</i>	<i>N. H.</i>	<i>R. I.</i>	<i>Vt.</i>	<i>Total</i>
Tuberculin test reactors . . . . .		574		1		575
Tuberculin test suspects . . . . .		15			1	16
Bang's disease reactors . . . . .	2	18	9	1	23	53
Bang's disease suspects . . . . .		1				1
Actinomyces . . . . .		2				2
	2	610	9	2	24	647

These cattle were checked for identification, tagged, and released to slaughtering establishments for immediate slaughter.

Forty-four (44) head of Canadian cattle were received at the stock yard station by rail and were released and allowed to proceed to the destination named in the permits by which they were accompanied.

Six hundred seventy-three (673) trucks and 3 railroad cars were cleaned, washed, and disinfected under direct supervision of an employee of the Division. The sales barn is cleaned, washed, and disinfected at regular intervals.

One thousand six hundred seventy-three (1,673) head of cattle were given hemorrhagic septicemia (shipping fever) treatments. This service is given only upon request of the owners of cattle and a nominal fee is charged to cover the cost of the biologic used.

## ARRIVALS AT POINTS OTHER THAN BRIGHTON

Three thousand (3,000) permits, required by law to accompany cattle when transported into Massachusetts (Division Order No. 43), were issued in 1939, as compared with 3,729 in 1938. Of this number, 225 were for shipments of

cattle for exhibition purposes. There were received on these permits 15,005 dairy cattle, 888 exhibition cattle, and 5,762 cattle consigned for immediate slaughter.

The dairy cattle originated at the following points:

Canada . . . . .	3,147	New Hampshire . . . . .	1,414
Connecticut . . . . .	847	New Jersey . . . . .	5
Illinois . . . . .	3	New York . . . . .	1,227
Maine . . . . .	511	Ohio . . . . .	680
Maryland . . . . .	3	Oklahoma . . . . .	1
Michigan . . . . .	492	Pennsylvania . . . . .	99
Minnesota . . . . .	236	Rhode Island . . . . .	340
Missouri . . . . .	103	Vermont . . . . .	5,129
Nebraska . . . . .	54	West Virginia . . . . .	1
		Wisconsin . . . . .	713

Total . . . . . 15,005

Of the number received, 14,547 were released on certificates of health issued by the state or country of origin; 151 were held, retested for tuberculosis, and released; and 307 were held and subjected to an agglutination blood test—300 were negative and released; 5 positive, 1 suspicious, and 1 doubtful were refused release and were disposed of by owners for slaughter.

#### RECAPITULATION

The total number of cattle received interstate is 21,637 (6,632 at Brighton and 15,005 at other points).

The following tabulation indicates the section from which cattle were received interstate:

Canada . . . . .	3,147
New England . . . . .	14,872
New York . . . . .	1,228
Southern states . . . . .	108
Western states . . . . .	2,282

21,637

#### CATTLE EXPORTS

One thousand one hundred ninety-three (1,193) head of cattle, identified and released at the dairy section of the quarantine station at Brighton, were transported direct to other states. In addition, interstate shipping certificates were issued by the Division covering 3,604 head of Massachusetts cattle for consignment to other states and countries. The following tabulation is a record of cattle exports:

*From the quarantine station at Brighton:*

<i>Destination</i>	<i>Head</i>
Connecticut . . . . .	4
Rhode Island . . . . .	1,185
Vermont . . . . .	4

1,193

*From Massachusetts herds:*

<i>Destination</i>	<i>Head</i>	<i>Destination</i>	<i>Head</i>
Alabama . . . . .	2	North Carolina . . . . .	2
California . . . . .	1	Ohio . . . . .	13
Colorado . . . . .	1	Oklahoma . . . . .	5
Connecticut . . . . .	1,197	Pennsylvania . . . . .	25
Illinois . . . . .	11	Rhode Island . . . . .	1,357
Indiana . . . . .	6	South Carolina . . . . .	1
Iowa . . . . .	3	Texas . . . . .	3
Kansas . . . . .	5	Vermont . . . . .	253
Maine . . . . .	79	Virginia . . . . .	2
Maryland . . . . .	23	West Virginia . . . . .	3
Michigan . . . . .	5	Wisconsin . . . . .	14
Minnesota . . . . .	2		
Montana . . . . .	1	Bermuda . . . . .	6
Nebraska . . . . .	1	Canada . . . . .	7
New Hampshire . . . . .	455	Jamaica . . . . .	1
New Jersey . . . . .	20	Venezuela . . . . .	2
New Mexico . . . . .	9		
New York . . . . .	89	Total . . . . .	3,604

## LICENSED DEALERS IN BOVINE ANIMALS

The licensing of persons engaged in the business of dealing in cattle intended for dairy purposes, with frequent inspection of dealers' premises and herds by agents of the Division, and periodic retesting of such herds is undoubtedly of great value to prospective purchasers of dairy cattle by giving assurance to a considerable extent of the status of cattle purchased through licensed dealers. Dealers as a whole are cooperating exceptionally well with the Division in furnishing weekly reports of their transactions in the purchase and sale of cattle.

Two hundred seventy-two (272) licenses were issued in 1939; 10 were temporarily suspended or revoked during the year for non-compliance with the rules and regulations in connection with sales and weekly reports. Twenty-six thousand eight hundred sixty-six (26,866) head of cattle were reported as sold for dairy purposes and were checked, identified, and approved; 3,199 were reported as sold for slaughter.

As a result of court action against a dealer in the City of New Bedford for dealing in bovine animals without a license, the dealer entered a plea of nolo at the Fourth District Court of Plymouth at Middleborough and paid a fine of \$25.00.

## BANG ABORTION DISEASE

With increased interest in Bang abortion disease manifest during the year, it is apparent that the trend on the part of owners of dairy cattle is toward establishment of disease-free herds through calfhood vaccination. The general opinion appears to be that by this method cattle will be less susceptible to the disease and that ultimately the same results—namely, Bang abortion disease-free herds—will be acquired with less financial loss than would be possible through any bloodtest-and-slaughter plan.

Although because of lack of legislative authority this Division has taken no active part in either the eradication or control of Bang abortion disease, it has continued to supply vials for use in obtaining blood samples, together with laboratory service for examination of same. Both vials and laboratory service are provided without cost to the owner of cattle.

The awarding of certificates under the Massachusetts plan for the establishment of Bang abortion disease-free herds has been continued. Thirty-five (35) of the 42 herds that were accredited as of November 30, 1938, were re-accredited during the year; 9 herds which had been accredited prior to 1938,

but had failed to qualify that year, were recredited this year; in addition to which 30 new herds were awarded certificates, 2 of which were afterward suspended; making a total of 72 herds, 2,990 head fully accredited on November 30, 1939.

In accrediting herds it is required that the blood samples be drawn by a veterinarian, that samples be submitted from all cattle in the herd six months of age or over, that all bloods be negative to dilutions of 1-50 and higher, that the herd be negative to two or more tests covering a period of at least twelve months, and that all cattle check with the tuberculin test records for a like period. The drawing of the blood is arranged for by the owner and at his expense.

Legislation for authority to engage in testing for Bang abortion disease was sought by the Division through a bill introduced at this year's session of the General Court—a bill drawn along lines similar to the law under which tuberculin testing is conducted. The bill, however, was referred to the next General Court. The failure to obtain legislation by which compensation could be paid for cattle declared to be affected with Bang abortion disease resulted, on May 1, in the withdrawal by the Federal government of further payment of compensation for blood reactors in Massachusetts.

During the year 24,153 blood samples drawn from cattle were submitted to the laboratory of the Division, as compared with 19,629 in the year 1938. These samples were submitted in connection with cattle undergoing tests for accreditation, cattle intended for interstate shipment, check tests on cattle received interstate, cattle in herds from which persons affected with undulant fever had obtained their milk supply, as well as samples received from veterinarians, owners of cattle, and others.

Of these blood samples, 20,336 were negative in all dilutions, 1,309 positive, 2,346 doubtful or suspicious (positive to 1-25 or 1-50), and 162 unsatisfactory (hemolyzed, or containers broken).

Blood samples from 246 goats, 22 horses, and 8 swine were also examined.

#### CALFHOOD VACCINATION

That calfhood vaccination will have an important place in the establishment of Bang abortion disease-free herds is evidenced by the ever-increasing number of requests received by the Division for information regarding such method, as well as the apparent tendency on the part of many state livestock officials to modify views formerly held against such measures.

The favorable results obtained by the use of vaccination, as reported by herd owners who have been using this method over various periods of time is without question tending toward a more general use of vaccination in combating Bang abortion disease.

Regardless of the fact that Massachusetts, through this Division, is authorized by law (Chapter 314, Acts of 1938) to provide service in the vaccination of calves between the ages of four and eight months, there has been little demand for such service, presumably due to the limited age period during which the service can be rendered, and to the requirements as to identification of calves, and the submitting of blood samples.

During the year this service was furnished 32 owners to 99 calves located as follows:

Bristol County . . . . .	4 owners, 9 calves
Franklin County . . . . .	1 owner, 3 calves
Hampden County . . . . .	15 owners, 55 calves
Hampshire County . . . . .	1 owner, 4 calves
Middlesex County . . . . .	3 owners, 6 calves
Norfolk County . . . . .	1 owner, 5 calves
Plymouth County . . . . .	1 owner, 1 calf
Worcester County . . . . .	6 owners, 16 calves



## RABIES

A total of 38 cases of rabies (37 dogs and 1 cat) were reported for the year, as compared with 60 cases (58 dogs, 1 cat, and 1 cow) for the year 1938—the lowest number for any like period for the past forty or more years. With a record of only 7 cases reported during the first four months of the year, followed by three months in which there were no cases, a rabid dog was reported in July in the town of Plainville, followed by what virtually appeared an epidemic of cases in Foxboro, Franklin, and contiguous towns, resulting in a total of 26 cases reported in that district between July 1 and November 30, the end of the fiscal year. As rabies had previously been reported in Rhode Island, it is possible that this outbreak originated by or through contact with a rabid animal from that state.

As in all cases of reported rabies, inspectors of animals were immediately instructed to see that all contact animals were quarantined and, in cooperation with the State Department of Public Health, the town officials of the towns involved were advised as to the adoption of general quarantine measures, resulting not only in the imposing of town quarantines in many instances, but also in the holding of so-called "rabies clinics" by local boards of health for the purpose of providing preventive rabies vaccination of dogs.

In addition to towns and cities in which preventive rabies clinics for dogs have been held yearly for several years, such clinics were held also in many of the towns in which rabies was diagnosed during the outbreak, resulting in clinics in a total of 45 towns, at which single injection prevention inoculations were administered to 14,635 dogs out of a total of 37,786 dogs licensed.

## RABIES

	SHOWING SYMPTOMS				CONTACT			BITE CASES				
	Positive	Negative	Questionable	Released	Killed or died, no symptoms	Killed—Posi- tive	Disposal pending	Released	Killed—no examination	Killed— negative	Disposal pending	Total
Forward, Year 1938 . . . .	—	—	—	14	—	—	—	172	—	—	—	186
December, 1938 . . . . .	2	—	—	25	—	—	—	398	1	10	—	436
January, 1939 . . . . .	2	1	—	—	—	—	—	404	1	11	—	419
February . . . . .	1	2	—	3	—	—	—	355	1	12	—	374
March . . . . .	2	6	—	7	—	—	—	576	2	12	—	605
April . . . . .	—	2	1	—	—	—	—	739	2	23	—	772
May . . . . .	—	1	—	—	—	—	—	1,055	11	21	—	1,088
June . . . . .	—	1	1	—	—	—	—	1,095	3	25	—	1,125
July . . . . .	7	2	2	14	2	—	—	877	7	20	—	931
August . . . . .	3	3	5	26	11	—	—	786	5	31	—	870
September . . . . .	5	4	—	1	—	—	—	721	2	22	—	755
October . . . . .	4	1	—	5	—	1	—	564	2	17	—	594
November . . . . .	10	—	1	3	—	1	—	372	2	18	—	407
Forward . . . . .	—	—	—	—	—	—	4	—	—	—	177	181
Total . . . . .	36	23	10	98	13	2	4	8,114	39	227	177	8,743

The above record refers  
to the following animals:

Cats . . . . .	1	1	2	1	13	—	—	82	3	44	2	149
Cattle . . . . .	—	1	—	16	—	—	—	—	—	—	—	17
Chipmunk . . . . .	—	—	—	—	—	—	—	—	—	1	—	1
Dogs . . . . .	35	21	8	79	—	2	4	8,022	35	173	175	8,554
Horses . . . . .	—	—	—	2	—	—	—	1	—	—	—	3
Muskrat . . . . .	—	—	—	—	—	—	—	—	—	1	—	1
Monkeys . . . . .	—	—	—	—	—	—	—	8	—	—	—	8
Rabbits . . . . .	—	—	—	—	—	—	—	1	1	3	—	5
Raccoon . . . . .	—	—	—	—	—	—	—	—	—	1	—	1
Rat . . . . .	—	—	—	—	—	—	—	—	—	1	—	1
Squirrels . . . . .	—	—	—	—	—	—	—	—	—	3	—	3

Total positive cases, 38



## RABIES BY TOWNS

Bedford .....	3	Hingham .....	1	Randolph .....	1
Bellingham .....	2	Manchester .....	1	Waltham .....	1
Blackstone .....	1	Marblehead .....	1	Wayland .....	1
Canton .....	1	Mendon .....	1	Webster .....	1
Foxboro .....	7	Milford .....	1	Winchester .....	*1
Franklin .....	9	Norfolk .....	1	Woburn .....	1
Grafton .....	1	Plainville .....	1	Wrentham .....	2
Haverhill .....	1			*cat	

Only one of these animals was reported as a stray (owner unknown).

## RABIES BY COUNTIES AND MONTHS

County	Dec.	Jan.	Feb.	Mar.	July	Aug.	Sept.	Oct.	Nov.	Total
Essex .....	1			1	1	1				4
Middlesex .....		2	1		2					5
Norfolk .....				1	4	1	4	4	9	23
Plymouth .....									1	1
Worcester .....	1					1	1	1	1	5
Total .....	2	2	1	2	7	3	5	5	11	38

The heads of 292 animals were received for laboratory examination. Of this number, 1 cat and 31 dogs were reported as positive; 47 cats, 1 chipmunk, 1 cow, 194 dogs, 1 muskrat, 3 rabbits, 1 raccoon and 4 squirrels as negative; and 2 cats and 6 dogs as questionable.

Fifty-four (54) persons were reported as bitten by rabid animals or exposed to them. Seven thousand nine hundred forty-two (7,942) persons were reported as bitten or scratched by animals.

## HOG CHOLERA

During the year 82,056 head of swine were given treatments for and in prevention of hog cholera on 825 premises by veterinarians in the employ of the Division. In addition, 39,586 head were treated on 197 premises by veterinarians in private practice.

In addition to the above, 24,402 head of swine were treated on 184 premises for infections other than cholera by State-employed veterinarians and 5,233 head were treated on 27 premises by veterinarians in private practice.

## EQUINE ENCEPHALOMYELITIS (SLEEPING SICKNESS)

That the theory that weather conditions favorable to the propagation of blood-sucking insects, such as the mosquito, are a factor, if not a principal cause, for the spread of equine encephalomyelitis is to some extent justified, was apparently substantiated by the fact that, although a few scattered cases of the disease occurred during the past season, its generally anticipated re-appearance in epidemic form failed to materialize.

Instead of a long period of warm, damp weather, such as prevailed throughout the summer of 1938, the weather this year was unusually dry, resulting practically in drought conditions, and therefore especially unfavorable to the breeding of mosquitoes and other blood-sucking insects.

During the spring of the year regional meetings were held in cooperation with county agents, at which the nature of the disease and ways and means of prevention were discussed. The Division also prepared and furnished 20,000 copies of a pamphlet entitled "Equine Encephalomyelitis (Sleeping Sickness)," containing information in the form of questions and answers. These pamphlets were distributed with the cooperation of county agents to farmers, horse owners, etc. In the pamphlets, at the meetings, by radio broadcasts, and through newspaper releases stress was placed on the advisability of early preventive or protective vaccination of horses.

Questionnaires were sent out by this Division to veterinarians requesting information as to the cases observed in their practice, outcome of same, number of horses vaccinated, etc. Replies were received from 144, of which 120 reported vaccinating 13,509 horses with so-called "chick vaccine"—two injections, seven to ten days apart, being generally employed. With few exceptions no serious after-effects resulted from this treatment.

During the season all reports of suspected cases were investigated. A positive diagnosis was accepted in 13 cases, of which recoveries were reported in 5—East Bridgewater (April), Gardner (August), Granby (October), North Brookfield (May), Wareham (October)—and deaths in 8—Dartmouth (August), Easton (July), Hopkinton (July), Lancaster (August), New Braintree (August), Northfield (July), Westboro (July and August). A positive diagnosis was confirmed by laboratory examination of brains of two horses—New Braintree and Westboro (August).

Regardless of the fact that early attention to vaccination may have been beneficial, failure of the anticipated return of equine encephalomyelitis, epidemic in extent, is believed to have resulted mainly because of weather conditions.

### EQUINE INFLUENZA

Horse influenza, a disease generally associated with the transportation of horses by rail and generally known as shipping fever, was reported early in April. First reported in connection with a consignment of horses received at a sales stable located in Lowell, it became practically epidemic, appearing in widely separated sections of the Commonwealth, but traced more or less directly to horses from the Lowell stable or to contact with such horses. Unusually virulent in type and exhibiting symptoms varying to a considerable extent in character, and with an exceptionally high mortality rate, it was somewhat confused with equine encephalomyelitis in many instances. Fortunately, with the advent of warmer weather the outbreak abruptly subsided.

### AVIAN TUBERCULOSIS

An investigation by the Division of a report from the State College that avian tuberculosis had been identified in dead poultry sent to the college laboratory for diagnosis resulted in the finding of extensive infection by tuberculosis of a flock of poultry located in the eastern part of the State.

From the history of birds in the flock "going light," frequent deaths, and by finding tuberculosis in birds selected from the flock at random, it was decided that in the interest of public health the entire flock should be condemned and killed. Following this decision an order of killing was issued in accordance with the law (Chapter 129, section 11, General Laws). The birds in the flock were duly appraised by a representative of the Middlesex County Farm Bureau and the poultry were slaughtered under inspection of two veterinarians—one from this Division and one representing the State Department of Public Health. One hundred seventy-eight (178) birds were killed, of which 58 were found diseased and the carcasses condemned. The carcasses in which no disease was found were sold for food purposes, the proceeds reverting to the owner of the flock. In addition, reimbursement was made by the State in an amount to equal the full appraised value. No compensation was allowed for the 58 condemned birds.

Following condemnation and removal of the flock, the premises were thoroughly cleansed and disinfected, old woodwork was torn out and the ground was turned over.

The handling of this case brought to the attention of the Division certain facts: (1) avian tuberculosis is more prevalent in Massachusetts than is generally suspected; (2) poultry prepared for market are dressed but not drawn and, when sold to the consumer and drawn, no governmental inspection is provided or required by law; (3) with few exceptions, the carcasses which were condemned appeared to be in first class condition; and (4) with the few exceptions mentioned above, all of the birds slaughtered, including the diseased birds, would under ordinary circumstances have been disposed of for food purposes through the usual market.

### FOWL TYPHOID

An outbreak of fowl typhoid, which was confined to a relatively small area in Middlesex County, was called to the attention of the Division in the month of August by the county agent in that county.

The Director, accompanied by a representative of the county extension service, visited several premises on which there were poultry affected with this disease. The flocks were mostly small. In many cases poultry on adjoining premises were also diseased. Some owners, as soon as infection was found in their flocks, disposed of their healthy birds for slaughter, while in some cases other owners reported losses as high as ninety per cent.

A letter suggesting proper control measures, which was endorsed by the Department of Veterinary Science of the Massachusetts State College, was sent by the Division to poultry owners in the infected area.

### MISCELLANEOUS DISEASES

*Actinomycosis* — Fourteen (14) head of cattle were reported, of which 12 were slaughtered and 2 are now under quarantine.

*Blackleg*—Preventive vaccination treatment was applied to 2,143 head of young cattle in 201 herds located in 57 towns.

*Glanders* — Agglutination blood tests were made on bloods from 6 horses reported as suspected of having glanders. The results were all negative.

*Mange* — Approximately 188 head of cattle in 22 herds were reported. These cattle were held in quarantine until cured and then released.

*Hemorrhagic septicemia* — Forty-seven (47) head of cattle in 3 herds were given preventive hemorrhagic septicemia inoculations.

### GOATS

Tuberculin tests and agglutination blood tests were applied under State supervision to 232 goats in 15 herds, with negative results.

### ANNUAL INSPECTION OF NEAT CATTLE, SHEEP, AND SWINE

In accordance with section 19, Chapter 129 of the General Laws, the annual inspection of neat cattle, sheep, and swine, and of the premises where kept was ordered on November 4, 1938, to be completed on or before January 1, 1939.

From reports received from 351 cities and towns in the Commonwealth, inspections were made of 22,290 premises, on which were located 213,614 head of cattle, 6,008 sheep, 85,492 head of swine, and 3,117 goats. Of the total number of cattle reported, 145,492 were listed as dairy cows; 2,350 bulls and 15,860 cows were recorded as purebreds.

Regional meetings of inspectors of animals were held in the month of November at Boston, Greenfield, Pittsfield, Springfield, and Worcester, for the purpose of giving information and instruction relative to the duties of the inspectors of animals.

### DIVISION OF LIVESTOCK DISEASE CONTROL

#### FINANCIAL STATEMENT

APPROPRIATION CLASSIFICATION	APPROPRIATION	EXPENDITURES
Directors' salary .....	\$ 4,000.00	\$ 4,000.00
Personal services .....	26,400.00	25,843.44
Expenses (office) .....	8,838.58	
Brought forward, 1938 appropriation .....	115.96	8,670.05
Personal services, veterinarians and agents .....	68,000.00	67,577.83
Traveling expenses, veterinarians and agents .....	15,107.85	
Brought forward, 1938 appropriation .....	121.19	14,735.07
Extermination .....	3,024.06	
Transferred, appropriation for small items .....	21.00	
Brought forward, 1938 appropriation .....	24.22	2,003.73
Reimbursement for certain cattle killed .....	35,000.00	
Brought forward, 1938 appropriation .....	8,432.26	29,466.72
Reimbursement to towns for inspectors of animals .....	5,200.00	5,063.28
	<hr/>	<hr/>
	\$174,285.12	\$157,360.12
Unexpended balance .....		16,925.00
	<hr/>	<hr/>
	\$174,285.12	\$174,285.12

Financial Statement Verified.

Approved

GEO. F. MURPHY,

Comptroller.

Respectfully submitted,

MARY H. GALUSHA,

Director.



## REPORT OF DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

The Division of Dairying and Animal Husbandry continues to stress the importance of quality milk production, not only in Massachusetts but in the entire milk shed that is supplying our Massachusetts markets.

However, during the past year the work of the Division in connection with other animals has received the personal attention of the director. Meetings were attended in all parts of the State where breeders or growers of cattle, sheep, goats or horses gathered to discuss the matter of increased production of farm animals. Talks were given to those groups. Counsel was given wherever such was sought or needed for the advancement, protection and extension of improved marketing. Persons inquiring about the management of livestock farms were urged to visit one of our progressive farms where livestock was raised and where the topography and soil were similar to the inquirer's farm, and make a study of the methods employed on a successful farm that could be used to advantage on other farms.

During the year the division has been able to help a great many farmers who carry sheep as part of their livestock interests, through the fine work of the Massachusetts Sheep Demonstration Farm located at North Hatfield. The following is a summary of distinctive features connected with the operation of this privately-owned, State-contracted farm. (As provided by the statutes, for the establishment of Sheep Demonstration Farms.)

- 81 Crossbred ewes imported from other sheep growing states and sold to eight new sheep growers; one a former grower buying for replacement.
- 29 Purebreds were sold from the flock maintained by the owners of the farm to eight sheep growers. Seven of the twenty-nine were rams to head flocks, thus fixing or improving the conformation, matured market size, etc., of the flocks where used.
- 123 Persons from within the State, who were interested specifically in stock, or information on the care, feeding, breeding or general information visited the farm during the past year.
- 70 Persons attended a sheep demonstration program on April 8, 1939. The said program arranged to bring to them, through practical demonstrations information on pertinent flock management subjects.
- 4 Times during the year stock judging teams from the Massachusetts State College spent several hours studying and judging sheep at the farm.
- 1 Group from Smith Agricultural School spent an afternoon studying the sheep and their management.

Several persons including one farm manager spent from one day to a week working on the farm for practical experience with sheep farm management methods. The manager mentioned was from a farm that had imported 110 ewes to start a new flock.

Purebred sheep from the demonstration farm were exhibited at the International Livestock Show against the world's best and came home with many fine prizes.

Incidentally a Massachusetts Dorset breeder carried his sheep from coast to coast, and in Canada, winning many firsts and grand championships wherever shown. Massachusetts sheep are becoming sought for their quality. We hope for great strides in this field within the next few years.

## POULTRY INSPECTION

The division has continued its activity with the poultry industry of our State and has enjoyed the fine cooperation of the flock owners who have come under our supervision.

In view of the fact that Massachusetts has a national reputation for breeding stock, baby chicks and hatching eggs as well as being the possessor of many disease-free flocks, our department is doing everything possible to maintain that reputation and possibly improve upon it. There are four

classes of poultry flocks in the state that the department supervises and identifies for the purpose of providing reliable sources of healthy, high-quality stock, and to enable the producers of such stock to be properly identified. The pullorum disease-free grades are known as Massachusetts Pullorum Passed and Massachusetts Pullorum Clean. The Massachusetts Pullorum Passed grade allows for the listing of flocks which are officially tested by the Massachusetts State College Veterinary Department and are found 100% free from this disease. Names and addresses of owners of these flocks were prepared and distributed.

Massachusetts Pullorum Clean grade is the next higher grade which calls for two consecutive tests, similar to the Pullorum Passed Test. The total number of non-reacting flocks for the past season was 289 (100% tested), according to the Massachusetts State College, Department of Veterinary Science.

*Poultry Certification:* 16 breeders throughout the state had their flocks supervised by the department. Each bird was individually inspected and banded, provided that it met the grade requirements for freedom from pullorum disease. Likewise, these birds had to show health, vigor, productive capacity and reasonable freedom from standard disqualifications. At least two visits were made during the hatching season of 1939 for the purpose of checking the size of hatching eggs, set by the breeders. If the grade requirements are satisfied the flocks are then officially recognized as being Massachusetts Certified Pullorum Clean.

*Record of Performance.* This year 16 breeders met the requirements of the grade known as Massachusetts Record of Performance Pullorum Clean. These flocks must meet the requirements of the Massachusetts Certified Pullorum Clean Grade. In addition, unannounced inspections are made of these flocks throughout the year. The inspector at this time takes charge of the trapnets, the records, and checks for accuracy. Such additional information as number of birds in breeding pens, pedigree eggs set, chicks hatched and stock sold, is filed with the department. Private advertisements of the breeders are also checked and approved. In order to retain the fine reputation enjoyed by Massachusetts breeders many state, sectional and national meetings are attended in the interests of our R.O.P. program. Circulars are prepared and published in which these high quality products of the Massachusetts poultry industry are advertised. The department also prepares an annual summary of the breeding work connected with the various flocks under the supervision of the state.

The following is a brief summary of the results obtained by our R.O.P. breeders for the 1938-39 season:

Number of birds entered under R.O.P. supervision.....	8,013
Number of birds passed under R.O.P. supervision.....	3,990
Average production of all birds passing under R.O.P. supervision	247.07
Average egg weights of all birds passing under R.O.P. supervision	25.72
Average body weights of all birds passing under R.O.P. supervision	5.95 lbs.
Number of Pedigree Pens .....	257

*Poultry Tattooing.* The program for tattooing has been continued during the past year. This program is carried on in connection with the Poultry Transportation Law which is a check on thieving. There has been distributed to date 701 tattooing outfits. Poultry flocks are coded and the State Police receive a copy of the number assigned to each poultryman. Should tattooed birds be stolen the police are notified. In this manner stolen poultry can be identified either through the police department, or the State Department of Agriculture.

*Poultry Transportation Law.* During the past year 576 licenses have been issued to persons and firms regularly engaged in the business of transporting poultry over the highways. The purpose of this law is to check the buying,



selling, and transportation of poultry. It is another method of eliminating poultry stealing in the state.

*Miscellaneous Poultry Work.* Exhibits were displayed at the World's Poultry Congress in Cleveland, and at the Eastern States Exposition in Massachusetts, as well as at other fairs in the state. The purpose is to advertise the poultry industry of Massachusetts and the breeding work that is being conducted within the state. The World's Poultry Congress Exhibit was financed by the Massachusetts Industrial and Development Commission.

During the past year the poultry inspector of the department acted as secretary for the Massachusetts Federation of Poultry Associations and the Massachusetts Record of Performance Association.

In co-operation with the Massachusetts State College and County Agents a disease eradication program is being carried out successfully.

### GOAT BREEDING

Goat breeding maintains its interest in Massachusetts and production has increased over former years. The milk goat will unquestionably continue to be an important domestic animal in Massachusetts. This industry is being promoted by men and women of sound judgment, from the many professions and walks of life. They are determined to have high-grade animals and produce quality milk and milk products.

The effort expended by the milk goat breeders is evidenced by the increased number of entries of goats of high quality at many of the fairs conducted throughout the State. Their interest is also apparent by such activities as running milk scoring contests for super quality exhibits, and by adopting a method of scoring and inspecting goat dairies by duly assigned members. A certificate of merit to be presented to those who meet their exactly high standard has been designed and made available to the several associations by the united effort of the Massachusetts Milk Goat Breeders' Council. All of this activity within their circles on the scoring of goat dairies is predicated by the desire to run these advanced experiments as feelers to ultimate laws and regulations suited to their product and their production conditions.

Goat milk and dairies producing it are just as much a consumer hazard as is cow's milk or the dairy farms producing such milk. We, therefore, believe that not only those involved in the production of goat milk, but all who are concerned with continued milk sanitation and a protected milk supply should give thought of the need for proper legislation to take care of this situation.

### SWINE

The swine producers in the Commonwealth believing they could find a greater degree of satisfaction in their work by banding together organized the Massachusetts Hog Growers' Association. Regular meetings have been held at which time speakers have been present to discuss various phases of their important industry. The division has assisted in such matters by furnishing suggestions for better regulation of feeding garbage, housing, etc., by giving aid and advice with production, breeding and feeding problems. Dressed pork, however, continues to bring a low price and a more economical production is necessary to counteract the effects of decreased income.

### FURTHER DEVELOPMENT IN RAISING HORSES

The horse breeders, particularly those interested in pleasure type horses have been forging ahead, by unified efforts through their organization, even though the horse population has steadily decreased. This decrease has been largely by reason of the fact that machinery replaced draft horses on farms and in industry. Light horses are actually becoming more popular. The

efforts of the department and others to show the business man or woman the advantages gained through improved health, and the wholesome diversification of their time by the use of good horses is yielding results. To ride a well mannered horse through the miles of planned trails out over the beautiful countryside will do much to have one fully realize the true values of our fine State. The greater use of pleasure horses will keep more of our land in use to supply feeding materials, more men in employment, and a more healthy populace. The division has felt the work spent on light horses was a very worth-while promotion.

### PROMOTIONAL ACTIVITIES

The activity in promotional fields of endeavor has been aggressively carried on by means of articles written for publication in farm or daily papers, by means of prepared radio talks, and by assembled group meetings throughout the Commonwealth. The director has been called to various meetings throughout the New England area to discuss the regulation of milk produced for our markets or subjects pertinent to its production. The division has worked in complete harmony with the various other established agencies within our industry such as producers, dealer organizations, the farm bureau, the extension service, the State college, the various fairs and market outlets for the better handling of dairy or livestock products.

### INSPECTION OF DAIRY FARMS

Dairy farm inspection under Chapter 305 of the Acts of 1932 has progressed with varying degrees of improvement. The progress has been very good along the lines of uniform interpretation of regulations. Several meetings of our inspectors have been held to discuss uniformity. One meeting was held at a farm where actual scoring was done and every detail discussed, and after this discussion a very definite progress was made on uniform interpretation. The problem of local inspectors interpreting the regulations of the Milk Regulation Board along with their own local ordinances is still a problem. There seems to be no practical way of accomplishing a method to bring about uniformity of the inspection of dairy farms, particularly on our Massachusetts dairy farms, and the only logical way is to enact legislation along this line. I particularly recommend that some form of legislation be passed that would enable the director to assign, allot or supervise the territory or farms to be inspected by local inspectors.

The limits of the milk shed remain about the same except that within the area many requests for inspection of dairy farms reveal the cream shippers are constantly changing to fluid milk producers. One prosecution and conviction resulted from a shipment of Michigan milk to Massachusetts markets from unregistered farms. In accordance with figures from the Federal Milk Administrator's office more milk is being produced per dairy and more dairies are shipping milk, the result being that surplus milk is increasing and lowers the blended price returned to producers. Some definite steps should be taken to control this increase of milk into Massachusetts in order that the Massachusetts producers can expand without being penalized.

Dairy exhibits were installed at New Bedford Food Show, Marshfield Fair, Topsfield Fair, Brockton Fair, Eastern States Exposition, Great Barrington Fair, the Boston Food Show, and the Trade Show at the Union Agricultural Meeting.

One hundred twenty-two certificates of registration were refused or revoked after hearings; 55 were reinstated and 67 stand refused or revoked to date.

Complete inspections were made of all dairy farms supplying the following creameries or plants out-of-State:

- H. P. Hood & Sons—Belfast, Maine  
 West Farmington, Maine  
 Lancaster, New Hampshire  
 Colebrook, New Hampshire  
 West Canaan, New Hampshire—Grade A  
 Barnet, Vermont—Grade A  
 Barton, Vermont  
 Newport, Vermont  
 Orleans, Vermont  
 Fairfield, Vermont  
 St. Albans, Vermont  
 Sheldon Junction, Vermont
- New England Dairies—Colebrook, New Hampshire  
 East Berkshire, Vermont  
 Enosburg Falls, Vermont  
 McIndoes, Vermont  
 Chelsea, Vermont  
 Concord, Vermont
- Whiting Milk Company—Newport, Maine  
 New Sharon, Maine  
 Harmony, Maine  
 Skowhegan, Maine  
 Colebrook, New Hampshire
- W. T. Boyd & Sons—Laconia, New Hampshire  
 Nashua, New Hampshire  
 West Rumney, New Hampshire
- Cummings Creamery—Newport, New Hampshire  
 Laconia Creamery—Laconia, New Hampshire  
 D. Buttrick & Son—West Lebanon, New Hampshire  
 Green Valley Creamery—Passumpsic, Vermont  
 Milton Cooperative Creamery—Alburg, Vermont  
 Richmond Cooperative Creamery—Richmond, Vermont  
 Seven Oaks Dairy—Newport, Vermont  
 Bethel Cooperative Creamery—Bethel, Vermont  
 Cabot Cooperative Creamery—Cabot, Vermont  
 Caledonia County Cooperative Creamery—West Barnet, Vermont  
 C. W. Coburn—West Fairlee, Vermont  
 Findeisen Farms—Lyndonville, Vermont  
 South Royalton Creamery—South Royalton, Vermont  
 Lakeside Creamery—Craftsbury Common, Vermont  
 Grand Isle Cooperative Creamery—Grand Isle, Vermont  
 Lyndonville Creamery Association—Lyndonville, Vermont  
 Riverside Dairies—St. Johnsbury, Vermont  
 St. Albans Cooperative Creamery—St. Albans, Vermont  
 Shelburne Cooperative Creamery—Shelburne, Vermont  
 Mountain View Creamery—Starksboro, Vermont  
 Tunbridge Cooperative Creamery—Tunbridge, Vermont  
 White River Cooperative Creamery—Rochester, Vermont  
 Fairfield Farms—East Corinth, Vermont

In addition to these supplies several independent dealers having a small number of dairies were inspected and registered.

The dairy farm inspectors spent a great part of the year inspecting dairies outside of Massachusetts whose milk was being sold in Massachusetts markets. The following tabulation indicates the number of inspections made during the year:

Inspections	Approved		Re-inspections	Approved		Other Farms Visited	Hearings Scheduled
	Yes	No		Yes	No		
1,131	791	340	423	312	111	233	160
1,879	1,685	194	133	105	28	135	—
869	307	562	914	600	314	226	170
1,282	892	390	243	209	34	320	94
1,202	702	500	403	295	108	245	79
729	284	445	485	352	133	100	87
1,057	773	284	263	236	27	132	20
107	71	36	41	36	5	43	12
1,136	641	495	623	485	138	279	379
84	61	23	26	20	6	—	2
559	455	104	112	78	34	213	—
Totals . . . .	10,035	6,662	3,373	3,666	2,728	938	1,003

In addition to the above inspections of dairy farms the following work was done:

Babcock tests .....	1,827
Sediment tests .....	270
Resazurin tests .....	160
Reductase tests .....	43
Phosphatase tests .....	21
Producers samples tested .....	2,961
Complaints investigated .....	101

#### MILK DEALERS' LICENSING AND BONDING LAW

To December 1, 1939 there were 615 applications on file under the Milk Licensing and Bonding Law, Chapter 94 of the General Laws, section 42A to 42K. These dealers filed with the Commissioner of Agriculture surety bonds or notes secured by collateral totaling \$638,981.95. The collateral, securing the notes, has been reviewed during the year. Chattel mortgages have not been accepted as security for the past three years. All dealers securing notes with such mortgages have been asked to substitute better security. Several cases are on file in which dealers have co-operated with the department by substituting.

Bonds have been foreclosed on two dealers and moneys totaling \$675.00 have been distributed to the proper parties. Four dealers have been restrained from operating milk plants and have retired from the milk business without the need of court action. Complaints have been received from fifty-three farmers.

Forty-eight cases were pending December 1, 1939. Two cases of re-organization were reported which affected security filed under the Bonding Law.

Area 17 (Boston). Several dealers contemplated changing their status from partnerships to corporations due to the effect of the Supreme Court decision regarding legality of the Federal Milk Marketing order. These changes affect collateral filed with the Commissioner.

Twenty-five dealers were summonsed into the office regarding their operations under the law. Approximately 350 dealers and 600 farmers were interviewed in the field.

In November, 1939, by law, the personnel of the department was assigned to the Milk Control Board to co-ordinate the activities of the two departments.

#### REPORT OF THE DIVISION OF MARKETS

The work of the division might be divided into three definite parts:

- (1) Regulatory work
- (2) Market reporting
- (3) Marketing counsel or promotional work.

##### REGULATORY WORK

The regulatory work of the Division of Markets consists of inspection work on seeds, eggs, poultry, apples, and at certain times, onions and other vegetables. The regulatory work consists of inspection of commodities where laws or voluntary grades have been established and it is the duty of this division to maintain adherence to established grades.



### *Turkeys*

Marketing turkeys becomes a greater problem each year, due to the gradual increase in production. Massachusetts, while essentially an industrial state, is taking advantage of the increased demand for this nationally known bird. According to the United States Department of Agriculture, 302,000 birds were produced in Massachusetts in 1939. This is an increase of 25% over 1938. In 1929 the production for the state was 61,000, and since then there has been a gradual increase, so that now Massachusetts by far leads the New England States—in fact, it almost triples the production of Vermont, which state has enjoyed the reputation of producing many turkeys.

In connection with this expansion of the turkey industry, the Massachusetts Department of Agriculture has rendered definite service to the industry, in order that the prosperity and well-being of this agricultural group might be increased. A member of the department attended the many meetings of the Massachusetts Turkey Growers' Association. Assistance was given wherever possible in carrying out the marketing program of this organization. Radio broadcasts were arranged and inspections of several thousand turkeys were made on the basis of the officially established grades of the Department. Assistance by way of establishing a brand mark was also given. There were many other ways in which the Department contributed toward the successful operation of this marketing project.

### *Eggs*

The production of eggs constitutes a major phase of our poultry industry. Few people realize the contribution that poultrymen make toward the wealth of Massachusetts. The income from the production of eggs alone is over \$10,000,000. When combined with poultry meat and hatching eggs, the value of poultry and poultry products sold approximates \$17,000,000, according to the 1938 figures issued by the U. S. Department of Agriculture. Perhaps the biggest contribution which the Massachusetts Department of Agriculture makes toward the poultry industry is through the law enforcement work. The Fresh Egg Law and the Egg Sizing Law enable the consumer to buy fresh, large eggs with confidence, when eggs are offered for sale or advertised for sale as fresh, strictly fresh, new laid or nearby, and the container is marked with "large size" designation. Inspections are being made by three inspectors.

Educational work is also carried on in connection with this law enforcement program. Last year 8570 inspections were made. Many hearings were held and violators were brought to the attention of the court in a few instances. The percentage of fresh egg violations has been reduced to less than 4%. Egg sizing law violations averaged approximately 23%, and the majority of these had to do with advertisements which stated prices, but which did not designate the size. The next most important reason for the violations was due to cartons not being marked.

The growth of the poultry industry has increased employment, has brought a much desired food product to the consumer at lower prices. The fresh egg law has been an important factor in the improvement of the quality.

### MARKET REPORTING

Market reporting has long been a function of the Division of Markets, and the service has been modified from time to time to meet the needs of changing conditions. The mailed report has given way largely to the newspaper report and more especially to radio reports. Ninety-two per cent of our farmers have radios and radio reports are available at 6:30 a.m. and at 12:15 noon. The highlights of the market at 6:30 a.m. have proven of distinct advantage, as they represent actual going prices at the moment.

The division recently conducted a poll to ascertain the value, timeliness and use of the market report from Boston. It is found to be practically impossible with present mail and train facilities to deliver reports much beyond



the city of Boston on the day they are printed. Several suggestions for improvement were suggested, and as far as possible they have been adopted.

The Worcester and Springfield market reports have excellent circulation by newspaper and over the radio.

### *Worcester Market Report*

The regular detailed report covering wholesale prices of native and shipped-in vegetables and fruits and including daily quotations on nearby eggs has been issued daily except Saturday. Information contained in these reports was gathered from local commission houses and from the farmers' market. Reports were mailed to various departments at the Massachusetts State College, to neighboring State Agricultural Departments, and to the U. S. Agricultural Marketing Service in Washington. The reports also were published in the Worcester Telegram, a morning paper, and in the Worcester Evening Gazette. In addition the reports were broadcast each day from Station WTAG at approximately 12:25 p.m. Each Saturday, instead of a market report, a summary of the week's activities on the produce market was issued and broadcast, along with any bits of agricultural or market news which might be of local interest.

A daily record has been kept of receipts of native produce arriving for sale at the farmers' market. The number of farm trucks using this market in 1939 averaged 41 per day, as compared with an average of 34 in 1938.

Special Apple Reports were issued, covering the apple market in detail, during the local season, roughly from the middle of August to the middle of March or early April. These were broadcast on the days issued. Cold storage holdings of apples in Worcester were obtained from local cold storage during the season. These figures were broadcast when obtained, and also included on the printed market reports for local publication.

Carlot receipts of fruits, vegetables, and other agricultural products have been obtained daily from the railroads and included on the daily market reports as a matter of record. Monthly and annual summaries of these receipts have been mimeographed.

### *Springfield Market Report*

Wholesale market reports, covering wholesale prices of fruits and vegetables sold in this market, were tabulated and issued daily. This information was obtained from producers, wholesalers, buyers, commission dealers and jobbers, and covered sales on carlot and less than carlot receipts of both local and shipped-in products.

The local Farmers' Market was canvassed daily and prevailing prices received from the growers. This information and the general trend of the market were transmitted to the producers, so that a more nearly normal price range prevailed, as growers realized in a short time just what the situation was, and whether or not they were in line with the market. This was done without mentioning names, but by giving the price range as requested on any given commodity. The market period was from about 6:00 a.m. to 4:00 p.m., with trading completed during these hours.

The Farmers' Market enjoyed a good season for the Association, and also for the growers. Prices held within a satisfactory range over an extended period on a great many commodities offered. The dry weather did not affect the crops materially, and in a great many cases it was necessary to transplant, but favorable receipts were offered nearly every day.

The central location of the Springfield Market makes it a terminal receiving and shipping section. Dealers make daily trips into the northern valley section, with coverage extending as far north as Keene and Brattleboro; westerly coverage extends to Pittsfield and Albany; easterly through the Brookfields and Ware section; and southerly to the New York Market.

Wholesale reports were issued through the local newspapers and radio stations, also on the early morning broadcasts from WBZ, Boston, twice a week. Newspaper dissemination was through the early editions, which

reached the suburban population with a combined circulation of 150,000. This gave the producer a definite picture of the market, the day of release. Radio stations WSPR and WMAS broadcast the reports daily at noon time, which was considered the most desirable period, when the grower would be able to tune in without loss of time. The reports allowed growers to make more careful preparation for the following day's market.

A weekly review of the Springfield Wholesale Market was released on Saturdays, giving a report of the volume of business, condition of the market, price report and summary of what happened of interest to growers in their marketing program.

A retail price report was released twice weekly after a canvass of the retail stores, giving information to consumers of the best buys at the counter and roadside stands, with the object of relieving the market of products in heaviest supply during the season when each commodity came into heavy bearing with resulting reasonable prices. Consumers aided in this program and purchased at a substantial savings. Growers likewise moved a greater volume of their products, which increased their net returns.

A special market article was released each week giving canning recipes and menus of locally grown products. This service was originated to encourage the use of growers' produce and fruits during the season when they were at their height and suitable for canning and preserving. These articles were prepared by the Home Bureau of the Hampden County Improvement League staff, and released through the press and radio.

Wholesale Egg and Poultry Auction Reports were prepared on Mondays and Thursdays, and released through the press and radio.

A special apple report was issued daily in conjunction with the Wholesale Produce Market Report, prepared to give a clearer indication of market values and possible marketing factors which would help in moving the abundant offerings. Cold storage figures were released the first of each month, with comparisons for the benefit of producers.

### MARKETING COUNSEL OR PROMOTIONAL WORK

As to the third phase of the work of this division, there we enter upon new fields rich in possibilities and capable of producing enormous returns for the labor involved, but fraught with dangers if not prosecuted honestly, carefully and systematically.

The promotional work is dependent for its success on the foundation work carefully done in inspection and market reporting.

### INSPECTION OF SURPLUS CROPS

During the early fall months serious surplus problems arose in respect to the apple and squash crops.

#### *Apple Inspection*

The McIntosh apple crop was the largest ever produced in the state, resulting in a burdensome surplus, which threatened to disrupt the normal marketing procedure of our fruit growers.

Because of this unusual situation the Federal Surplus Commodities Corporation came into the market with a buying program in early October. Because of the F.S.C.C. requirements that all purchases carry a federal or federal-state certificate showing grade, condition, etc., it was necessary for this division to employ six emergency apple inspectors to handle this work.

#### *Fees Charged*

These men worked under the co-operative agreement in operation between this department and the U. S. Department of Agriculture, which has been in effect for several years. Fees were charged for the inspections at rates varying from one to one and one-half cents per box, depending on size of shipments. Up to the end of the fiscal year purchases had totaled about 180,000 boxes, all of which had been examined and certified by our inspectors.

Collection of fees were practically equal to the extra expense of carrying on this emergency work, so that the service was self-supporting.

### *Clerical Work*

As a part of this work, it was necessary for us to establish a temporary district office at Concord, where we were provided office space without charge, at the Middlesex County Extension Service. Much of the clerical work was handled at this Concord office, and the additional expense of clerical personnel, as well as that of the inspections, was covered by the inspection fees.

### *Check-Loading*

Our inspectors also served in the additional capacity as check-loaders for the F.S.C.C., for which we were reimbursed by the Corporation at the rate of  $\frac{1}{4}$ ¢ per box or approximately \$1.50 per carload.

### *Squash Inspection*

The squash situation became acute in mid-October. Supplies on the farms of the Commonwealth were fully 50 per cent larger than average. Because of the fact that production had been unusually heavy, and because much of this had been grown by new producers who did not have adequate storage space, a serious problem arose regarding the prompt movement of this crop before hard freezing weather set in.

### *F.S.C.C. Purchases*

The Federal Surplus Commodities Corporation started buying in November and in a period of about three weeks purchased 1100 tons of Massachusetts squash, a large part of which came from the Connecticut valley sections. Here again it was necessary for this division to perform this inspection work. For this purpose five additional inspectors were hired and the clerical work was handled in conjunction with the apple work from the Concord office.

Fees for squash inspection were charged at the rate of 60 cents per ton. Inspectors also acted as check-loaders as in the apple deal, for which we were reimbursed at the rate of 13c per ton.

### *Consumption—the aim and purpose of production*

Low farm prices and lack of balance between industrial and agricultural incomes prompted local agricultural food producers to take serious interest in the consumer end of their business. With the realization that agriculture, like any industry, depends on demand for and consumption of the products, Massachusetts farmers now strongly support the Division's consumer information and promotional work which, as conducted, sometimes takes on an advertising character. Consumer demand for more information had already given impetus to this phase of the Division's work, but it was special promotional programs for relieving market situations on eggs, apples, and some other Massachusetts products that demonstrated to local producers the possibilities of this means for helping the agriculture of the State. Success of the "squash campaign" in the fall of 1939 was convincing proof. The squash program involved the efforts of the Division of Markets, the State Extension Service, and the cooperation of other agencies and consumers.

Market facts that encourage consumers to buy products when seasonal supplies are liberal and moderately priced benefit more than consumers. Guiding demand according to supplies helps stabilize the market and prevent extreme price fluctuations. While the natural tendency is to concentrate attention on native products, the viewpoint of the consuming public must not be slighted and the market situation as a whole must be fairly considered.

Consumers, bewildered by the mass of consumer material thrust upon them, turn to state agencies for market facts and ask for grades by which to judge and compare values. Various means of disseminating the information are used—(1) publications such as retail market reports, Fresh Food Facts, special releases, and inexpensive illustrated material. (2) radio broadcasts and talks to groups. (3) exhibits at fairs and in windows.



Weekly issuance of the Boston Retail Price Report (started in 1920) and collection of similar data in Springfield for file reference has been continued. Retail reports, crops and wholesale market data are basis for much of the consumer market advice prepared and distributed by the Division. Highlights of the brief market news paragraph heading the retail report are expanded for more popular presentation as "Fresh Food Facts". A mailing list (request only) of about 500 sends these reports to homes, schools, hospitals, food dispensing establishments and to newspaper household editors and radio stations. Recipients extend the publicity by posting the releases on bulletin boards, reprinting, re-editing for news articles, and broadcasting on regular household programs. During the year, several thousand copies of the egg law resumés prepared for consumers were distributed. Demand exceeds the supply of the marketing calendar which graphically pictures the seasons when different fruits and vegetables are in liberal supply and moderately priced. For the guide chart on the actual selection of fruits and vegetables demand comes chiefly from younger, inexperienced buyers.

In addition to the broadcasting of consumer market information by outside agencies as mentioned in the preceding paragraph, news of the retail markets was prepared for the regular Saturday noon broadcasts of the New England Radio News Service, and numerous special broadcasts featuring native products were presented. In discussion of food buying with clubs, classes and other groups, attention was also directed to the Massachusetts agricultural industry and its close relationship to other industries of the State.

Producers and distributors join in the sales efforts. The store egg window contest in Worcester resulted in many excellent displays. Egg and apple mechanical exhibits shared by the Department and the Extension Service have been loaned. These exhibits were designed to promote interest in the locally grown products by showing uses and dietary values. The fruit and vegetable models showing what to consider when buying have been sent about the state for demonstrations. At the Eastern State Exposition and the Boston Food Show a turntable exhibit showed the kinds of native grown products as they become available in market from month to month.

Besides three general ways of disseminating market information, other means are used to promote more orderly marketing and to increase consumption of native products,—the 302,000 turkeys and the \$17,000,000 worth of poultry products and the large squash crop, etc. Thousands of egg, cranberry, apple and squash recipes were distributed, arrangements were made for showing such movies as "Give the Fresh Egg a Break", stories were written for courtesy space in trade magazines, and the state egg meal menu contest was conducted in conjunction with the World's Poultry Congress.

The Director of the Division attended the annual meeting of Marketing Officials in Florida, November 13-18, 1939 and discussed with representatives from many of the different states problems relating to the marketing of agricultural products. Each agricultural section in this country has its special problems relating to either production, sale or distribution, and a frank discussion of the many phases of these important subjects is of great importance in a detailed study of analysis of the problems in Massachusetts.

The Division of Markets is fully aware of the magnitude of its responsibility to assist the farmers in every way possible under a more orderly and more profitable marketing plan. It will continue to develop its marketing service with the thought in mind of bringing to the farmers of Massachusetts a greater measure of prosperity in the marketing of local farm products.

## REPORT OF THE DIVISION OF PLANT PEST CONTROL

(This division became the Division of Plant Pest Control and Fairs effective November 3, 1939)

The duties in the Division of Plant Pest Control which are chiefly regulatory in their nature, are especially involved with the inspection of nursery and garden pests; the control of the white pine blister rust and apiary inspection. The greater part of eight months is consumed with the inspection of the stock growing in the nurseries. This past season light infestations of the European Pine Shoot Moth were found on Mugho and Scotch pines. The infested shoots were removed and burned. Several years ago this insect was quite prevalent, but in recent years it has been almost absent from the nurseries. The same holds true for the white pine blister rust in the nurseries. This is due to the vigorous campaign carried on against this disease, both by eliminating diseased trees and the removal of the alternate host for a distance of 1500 feet from nursery five-leaved pines.

A careful inspection was made for San José and Oystershell scale, and where infested plants were found they were destroyed or quarantined. When quarantined it is required that the infested plants be treated before being offered for sale. The amount of scale found, however, was almost negligible.

The Japanese Beetle is firmly established in Massachusetts and has been known to be in Springfield for more than ten years. Thousands of beetles are collected there each summer, but as yet, no appreciable damage has been noticed. This insect has been found in two nurseries, but only in small numbers. The quarantine covering the area infested by this insect is rapidly increasing and this should eliminate some of the inconveniences encountered in making shipments from Massachusetts. The nurseries were considerably freer of gypsy moths than for several years, and for this reason our inspections were completed and certificates granted to 328 nurseries at an early date. A great deal of time has been spent in recent years in cleaning the property surrounding the nurseries of various pests. The benefits of this work are shown in the lack of infestations in the nurseries and a decided advantage is obtained by being able to issue certificates in time for fall use.

The European Corn Borer continues to be a serious pest to farmers and market gardeners who desire to raise corn. The infestation in certain areas was lighter than in previous years, while in other areas it was more pronounced. Probably in the State as a whole it remains about the same as in the past few years. There is no question but what the European Corn Borer law is instrumental in keeping the insect in check, but because of the large variety of plants infested by this pest, additional control measures should be practiced. In the case of sweet corn, it is suggested that the cultural control be augmented by spraying—using nicotine or Derris sprays. The Division is continuing the practice of bringing violators of the European Corn Borer law into a hearing where the benefits are explained and a feeling of cooperation assured.

Last winter a check up was made to determine the area infested by the Oriental Moth. This insect was brought into Massachusetts 35 years ago, and a check up in 1930 showed that it had spread approximately 25 miles north of Boston and about the same distance south, while its spread inland had been only a few miles. The recent survey showed that the spread had been very slight in the last 10 years. The insect seems to be more prevalent in the section of Revere where an occasional report is received of both Norway Maples and fruit trees being stripped.

The area infected with the Dutch Elm Disease has increased slightly during the past year, and has brought the disease to a point in New York State only three miles from the Massachusetts border. Hundreds of dead and weak elms within the State have been removed, thereby eliminating many breeding places for the Bark Beetle which is responsible for the spreading of the disease. It is almost a foregoing conclusion that it will be only a short time before the Dutch Elm Disease is reported in Massachusetts.



The 1939 season of Apiary Inspection was particularly satisfactory. In Massachusetts, as elsewhere in the country, the prevailing bee disease is American foulbrood; the few mild cases of European foulbrood found are of slight significance. These apiaries in which American foulbrood had been found in 1938, as well as the adjacent apiaries, were re-inspected in 1939. In a large percentage of these apiaries, the disease was found to have been suppressed. Forty-five towns in which disease occurred in 1938, were apparently free from American foulbrood in 1939. If, however, disease had persisted, the apiary was continued in quarantine until such time as the disease could be suppressed. Thus, all the quarantined apiaries were continued under observation and control.

Essex County was thoroughly examined where considerable, but localized American foulbrood was found. The situation in this county is thought to be under control, and in 1940, a noticeable decrease in the prevalence of disease is anticipated. Inspection was extended to include towns not previously visited in Middlesex County and about half of Norfolk County. Additional towns in the Connecticut Valley were also inspected. By means of this "area clean-up" during the past two years, a satisfactory control of American foulbrood has been obtained from the northern boundary of Bristol and Plymouth Counties, north to the State line and west into the hill-towns, to a line between Heath and Granville. Relatively few colonies are kept in the Berkshire hill-towns; ultimately, it is intended to inspect all of these towns. It is hoped to continue the "area clean-up" policy established in 1938 and 1939 gradually enlarging the area under control.

It is apparent that the American foulbrood condition in a major part of the State has been vastly improved during the last two years; further improvement may be anticipated in 1940. New work is desirable south of Boston, as soon as practicable.

During the season, 2,503 calls were made as compared with 2,247 in 1938. The Deputy Apiary Inspectors were—Fred E. Challet, Northampton; Raymond Prud-homme, Lowell; and Howell W. Shuman, Billerica, working under the supervision of Dr. Burton N. Gates, Worcester, as Chief Apiary Inspector.

Continued progress was made in combating the white pine blister rust disease in the State. This fungous disease which is transmitted to white pines by means of wind-borne spores produced on wild and cultivated Ribes (currant and gooseberry) plants is quite generally present throughout the Commonwealth. Control is accomplished by the eradication of Ribes where they are growing within infecting distance of white pines worth protecting.

As heretofore, control work was conducted under the cooperative direction of this Division and the Division of Plant Disease Control, Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture. Federal emergency relief funds were allotted by the Work Projects Administration for control work in Massachusetts under the sponsorship of the Bureau of Entomology and Plant Quarantine. Six towns participated by providing transportation facilities for relief workers and 248 individual property owners cooperated in connection with the removal of European black currants and other cultivated Ribes. A limited number of man-days was allotted for work on State Forest lands by enrollees of two of the Civilian Conservation Corps camps in the State.

Excellent field conditions prevailed during the Ribes eradication season, the almost unprecedented drought making work in swamps less difficult and thus more efficient and effective. Control work was performed on a grand total of 109,217 acres from which 1,089,036 wild and 2,662 cultivated Ribes were cleared by the field personnel.

During the approximate periods from January 1-April 30 and from October 1-December 31, pine and control area maps were prepared in the field, on which control areas amounting to 138,972 acres were recorded. These areas included an aggregate of 41,560 acres of white pine.

Miscellaneous control activities included the elimination of blister rust cankers from certain pine plantations on the water supply reservation of the

City of Northampton in the towns of Whately and Williamsburg; a re-check of 67,641 properties in 28 towns in Bristol, Norfolk and Plymouth counties, in connection with the state-wide condemnation and elimination of the European black currant; and the re-examination of the environs of two State Forest Nurseries and four privately-owned nurseries, to insure the production of disease-free white pine planting stock through the maintenance of Ribes-free conditions.

Unusually heavy infection on Ribes was reported in all sections of the State. This fact emphasizes the urgent need for the continued efforts to eliminate Ribes from white pine producing areas in order to adequately maintain the control of the disease.

## REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

(This division was consolidated with the Division of Plant Pest Control into a new Division of Plant Pest Control and Fairs, effective November 3, 1939.)

### AGRICULTURAL FAIRS

The season of 1939, from an agricultural fairs standpoint, was a most favorable one. Weather conditions were unusually good during August and September when most of the fairs are held and attendance figures showed a marked increase over those of 1938. A portion of this increase was due to the fact that the hurricane of 1938 reduced fair patronage, especially at the Eastern States Exposition and at fairs held after the day of the hurricane.

The total attendance at all fairs in Massachusetts in 1938 was 555,179, while in 1939 this number increased to 759,688. This shows that 204,509 more people visited fairs in 1939 than did in the previous year. The total number of agricultural exhibits also showed an increase from 61,100 in 1938 to 62,489 in 1939. These figures do not include the number of agricultural exhibits at the Eastern States Exposition at Springfield or the Brockton Fair at Brockton. Again leaving out the Eastern States Exposition and the Brockton Fair, the total number of all exhibits was 75,763, an increase of over 3,000 for the year.

During the year 1939 the Department received applications for an allotment of State prize money from 134 organizations and associations. Of this number 111 held fairs. State premium checks to the number of 2,281 were sent out and of this number boys and girls received 614 for entries in junior classes alone, while young people also entered in the open classes and won many prizes when competing against their elders.

The Department also awarded 269 special two and three streamer blue ribbons; 129 bronze medallions (all of which went to boys and girls), one gold and four silver medals, one certificate of merit and 40 special trophies.

Six fairs had light harness racing and two pari-mutuel racing with running horses. Three fairs had horse shows and draft classes for horses and oxen were put on at twelve fairs.

The Eastern States Exposition received an allotment of State prize money this year for the first time to help in making up the tremendous loss which the Exposition suffered as a result of the 1938 hurricane.

Fair inspection work was carried on as usual and statistical and other data compiled as a result of this work.

The Monthly Fairs Letter has been sent out and information furnished not only to fairs requesting a prize money allotment, but also to garden clubs, and local groups holding exhibits and shows. Speakers for group meetings have been furnished and studies made of local conditions in order to assist fairs in their operation and management.

A list of dates of all fairs has been compiled and that for major fairs printed. The lists of dates of grange and community fairs have been mimeographed and distributed upon request. Radio broadcasts have been prepared

and given during the year stressing the agricultural and educational value of fairs and their service in improving the agriculture of the state.

The division has also assisted fairs in revising their premium lists and bringing them up-to-date and has approved proof of these lists before they have been finally printed and distributed.

The division has also charge of the care, maintenance and upkeep of two State Buildings, one on the Eastern States Exposition grounds, West Springfield, and the other on the Brockton Fair grounds, Brockton. Each of these buildings, including adjacent grounds, cover an area of approximately one acre which is landscaped and laid out with flower beds, trees, and lawns. The West Springfield building was kept open from June until September as a tourist information center under the supervisoins of the Massachusetts Development and Industrial Commission and over 1700 people registered.

#### YOUNG PEOPLE'S WORK

The division has fostered 4-H club, vocational agricultural school and Future Farmers of America work by cooperating with the state and county 4-H club leaders, vocational departments of the Department of Education and the vocational agricultural departments in high schools and with the Future Farmers of America.

A part of the expense of the Massachusetts 4-H club camp at Amherst has been paid by the Department and 4-H pins have been purchased. Cash prizes have been offered to boys and girls exhibiting at fairs and special trophies, medallions and ribbons have been awarded in judging and other contests.

Vocational school students have been awarded prizes in speaking, judging and other contests and Future Farmers of America have been given prize money to be awarded at their fairs.

This work with young people is very important and the Department has cooperated in their activities to the fullest extent, believing that every encouragement should be given to young people actively engaged in agricultural work.

#### SPECIAL EXHIBITIONS

The exhibits in the Massachusetts Building on the Eastern States Exposition grounds, West Springfield, and in the Massachusetts Building on the Brockton Fair grounds, Brockton, are the most comprehensive and elaborate of any special exhibit set up by the Department during the year.

This year at Springfield the main part of the building was devoted to a combination agricultural and industrial exhibit and in the two wings the Department of Conservation installed in one an exhibit featuring the fish and game activities of the state and in the other forestry and recreational work. The agricultural activities featured were dairying, fruit growing, poultry and poultry products and a special feature, Massachusetts foods, month by month, showing what foods were available either fresh or processed, each of the twelve months in the year. The poultry exhibit featured R.O.P. and certification work while apple storages available was emphasized in the fruit exhibit. Confectionery, sporting goods, rubber and new products were featured in the industrial exhibits and special mention should be made of the new products display collected and arranged by the Associated Industries of Massachusetts.

The Massachusetts Development and Industrial Commission had a booth and distributed literature and furnished information on the industrial and recreational opportunities in Massachusetts.

The feature exhibit in the Brockton Building was the World's Poultry Congress exhibit which was shown for the first time in Massachusetts after its return from Cleveland, Ohio, where over 75,000 people stopped to see the exhibit during the World's Poultry Congress, July 28-August 7th. The shoe manufacturers of Brockton installed a fine exhibit of shoes made in the Brockton district and the Cambridge Chamber of Commerce put up an exhibit of products made in Cambridge.



Agricultural exhibits were set up by the Division of Dairying and Animal Husbandry, Markets and the State Reclamation Board. There was also an exhibit by the Department of Conservation, Division of Fisheries and Game and displays of vegetables and cut flowers.

Special exhibitions were set up by the Department at the following fairs: Marshfield, August 21-26; Topsfield, September 6-10; Great Barrington, October 2-7 and Bristol County at Segreganset, October 4, 5, 6. Mechanical exhibits, farm products and special set-ups were made at Marshfield, Topsfield and Great Barrington and at the Bristol County Fair the World's Poultry Congress exhibit was displayed set up complete as at Cleveland.

The Department also made an exhibit at the New England Foods Exposition in the Boston Garden, October 14-21, inclusive. Special mention should be made of the Massachusetts State Exhibit at the World's Poultry Congress. This exhibit was made possible through the cooperation of the Massachusetts Development and Industrial Commission. The Commission paid the entire cost of the exhibit, including the expense of transportation and cost of setting up at Cleveland, and the return expense to Massachusetts. The Division of Fairs, however, worked on the proposition from the start and the assistant director acted as chairman of the Massachusetts Exhibit Committee, going to Cleveland with the exhibit and staying throughout the duration of the Congress.

Requests for departmental exhibits of various kinds are constantly increasing which entails additional work and expense as in many cases special material has to be prepared and labor and transportation costs add up very rapidly. Calls for assistance and attendance at meetings are also increasing and result in increasing demands on the division's personnel.

#### SUMMARY OF PRIZE MONEY ALLOTMENTS AND EXPENDITURES

##### (15 Agricultural and Horticultural Societies)

Barnstable County Agricultural Society, \$99.50; Barrington Fair Association, \$1020; Bristol County Young Farmers' Show, \$340; Eastern States Exposition, \$4737.40; Essex County Agricultural Society, \$1711.20; Franklin County Agricultural Society, \$1700; Hampshire, Franklin and Hampden Agricultural Society, \$1709.75; Highland Agricultural Society, \$950; Hillside Agricultural Society, \$950; Littleville Community Fair Association, \$696.95; Marshfield Agricultural and Horticultural Society, \$850; Martha's Vineyard Agricultural Society, \$450; Middlesex County Fair, \$469; Plymouth County Agricultural Society, \$600; Union Agricultural and Horticultural Society, \$950; total, \$17,233.89.

##### (30 Community Fairs)

Agawam Community Fair, \$50; Bolton Farmers' Fair, \$25; Burlington Fair, \$15; Cape Cod Horticultural Society, \$224.50; Chicopee Garden Club, \$20; Dahlia Society of New England, \$50; Dalton Community Fair, \$10; East Blackstone Community Fair, \$50; East Longmeadow Community Fair, \$12; Future Farmers of America, \$45; Granville Community Fair, \$65; Hampden County Boys' and Girls' Exhibit, \$150; Hampden Community Fair, \$15; Heath Agricultural Society, \$175; Elizabeth Peabody House Science Fair, \$75; Massachusetts Horticultural Society, \$82.75; Monson Community Fair, \$89.85; Montgomery Junior Fair, \$12; Natick Fair, \$211.25; Norfolk Junior Fair, \$45; North Shore Horticultural Society, \$85; Orange Boys' and Girls' Club, \$65; Rehoboth Community Fair, \$125; Spencer Fair, \$235.60; Sterling Farmers' Club, \$289; Southwick Community Fair, \$114.75; Springfield Onion and Potato Show, \$219.50; Westfield Young People's Agricultural Fair, \$40; West Springfield Junior Fair, \$8; Woronoco Harvest Festival, \$12; total, \$2,616.20.

##### (56 Grange Fairs)

Abington, \$8; Acton, \$8.50; Acushnet, \$12; Assonet, \$12; Boylston, \$7; Boxboro, \$12; Brimfield, \$34.90; Cheshire, \$13; Cochuuate, \$8; Dedham, \$15;



Dunstable, \$15; Dennis, \$8; Eastham, \$9; Fairhaven, \$20; Granby, \$12; Hanover, \$8; Hilltop, \$27\*; Holden, \$8; Holliston, \$8; Leicester, \$15; Lexington, \$20; Ludlow, \$15; Lunenburg, \$12; Mansfield, \$11.25; Merrimac, \$15; Mattapoisett, \$5.50; Nauset, \$8; Nemasket, \$26.50\*; Norfolk Pomona, \$8; Northboro, \$12; Norton, \$8; Palmer, \$12; Richmond, \$12; Riverdale, \$20; Rutland, \$12; Rochester, \$15; Stockbridge, \$12; Sherborn, \$8; Sturbridge, \$12; Swansea, \$8; Thrifty, \$15; Waltham, \$8; Warren, \$20; Westboro, \$12; West Boylston, \$8.50; Westford, \$20; West Newbury, \$8; West Springfield, \$7.75; West Stockbridge, \$11.75; West Wareham, \$8; Weymouth, \$8; Wilbraham, \$20; Williamstown, \$20; Wilmington, \$20; Worthington, \$8; total \$725.65.

\* Prize money paid for two fairs during fiscal year.

(9 Poultry and Rabbit Shows)

Athol Poultry and Pet Stock Association, \$288.75\*; Springfield Poultry Club, \$175; Massachusetts Federation of Poultry Associations, \$74; Boston Poultry Exposition, \$499; Massachusetts State Show Circuit, \$99; Essex County Poultry Association, \$63; Essex County Rabbit Breeders' Association, \$51.50; Holyoke Poultry and Rabbit Breeders' Association, \$149.75; New England Poultry Association, \$200; total \$1600.00.

SUMMARY OF STATE AGRICULTURAL PRIZE MONEY PAYMENTS

Agricultural and Horticultural Societies .....	\$17,233.89
Community Fairs and Exhibitions .....	2,616.20
Grange Fairs .....	725.65
Poultry and Rabbit Associations .....	1,600.00
Boys' and Girls' Club Work .....	1,796.80
Badges, medals, cups, etc. ....	903.69
Special Exhibitions .....	3,794.19
Miscellaneous payments .....	354.55
	<hr/>
	\$29,024.97

\* Two shows held during fiscal year.

Financial Statement Verified.

Approved.

GEO. E. MURPHY,  
*Comptroller.*

REPORT OF THE STATE RECLAMATION BOARD

The State Reclamation Board, which is the successor to the old Drainage Board, was evidently put into the Department of Agriculture because its original purpose was to hear petitions on problems affecting lowlands and to create reclamation or drainage districts where it was found advisable to drain wet lands to make possible their use for agricultural purposes. The Drainage Board, which was created in 1918, was authorized to perform functions previously exercised by the Superior Court. In 1929 when the demand became general for legislation which would be helpful in carrying on the war against the mosquito, the Reclamation Law (Chapter 252 of the General Laws), was amended. This amended act provided that towns and groups of towns could petition the Reclamation Board, requesting a survey of mosquito breeding conditions in their vicinity. It also provided that after such a survey and report, if funds were appropriated or contributed to carry out the suggestions of the report, the Reclamation Board should create projects for mosquito control work along somewhat the same lines as they had formerly been created in districts for drainage purposes.

Since the enactment of this so-called Mosquito Control Act in 1929, the supervising of these mosquito control projects and the making of surveys for municipalities requesting same has been the principal activity of the State Reclamation Board. During the year 1939, mosquito control activities in Massachusetts carried on under the supervision of the State Reclamation Board were:

1. Supervision of mosquito control projects organized under the "Mosquito Control Act".

2. Maintenance of mosquito control works largely in salt marsh areas, constructed with state funds as an unemployment relief measure during the years 1931, 1932 and 1933.

3. Surveys in cities and towns in response to petitions from municipal administrative officials.

4. Planning of W.P.A. projects for mosquito control drainage.

5. Technical assistance to individuals undertaking to control the mosquito nuisance on their own property, and,

6. Distribution of public information concerning the mosquito problem.

Under the first heading there are three mosquito control projects, funds for which are provided by municipal appropriations plus limited contributions from interested individuals and organizations.

The Cape Cod Project, comprising the fifteen towns in Barnstable County which is the largest single project in the state, carried on its usual construction and maintenance work during the year 1939, and for this purpose the sum of \$36,041.26 was expended. This project is now completing its tenth year of operation. It has reduced the prevalence of mosquitoes on Cape Cod to the point where they are no longer a nuisance. The first control work of the project was directed principally against the salt marsh mosquitoes, which, surveys showed to be responsible for about 90% of the trouble. The control of these mosquitoes is largely accomplished, and the work now consists principally of the maintenance of the extensive salt marsh drainage that has been installed to prevent breeding, and the locating and elimination of sporadic breeding areas that appear during exceptional conditions of tide and rainfall. An important part of the work of the project now is the controlling of other species of mosquito, which with the disappearance of the salt marsh mosquito as the preponderant element, has assumed greater proportional importance. Good progress in the control of fresh water breeding species is being attained. Drainage, oiling, and the elimination of opportunities for breeding near habitations are being carried on.

The records of the prevalence of adult mosquitoes for the last three years show the various species to be present in the following proportions:

Salt marsh species—21% *Mansonia perturbans* 29%;

Species of fresh water breeding—*Aedes* 34%;

*Culex* 13%, and *Anopheles* 3%.

*Mansonia perturbans* now presents the greatest difficulties of control on the Cape. Mr. H. J. Myhre, Superintendent, and Mr. R. L. Armstrong, Entomologist of the Cape Cod Project, have made considerable progress in locating the breeding places and determining the habits of *Mansonia perturbans* and in carrying on much-needed experimentation in the means of controlling this particularly baffling species.

The Nantucket Project does not cover as large an area as the Cape Cod Project, but the work was started in the same year and has been ably supported by the town of Nantucket and the summer residents. Expenditures for the Nantucket Project during 1939 were \$2,165.36.

The work of another small project in Belmont consists largely of oiling catch basins.

The projects organized under the state appropriations of 1931, 1932 and 1933 referred to in item 2 above, included practically all of the salt marsh areas of the state, other than those already a part of the Cape Cod and Nantucket projects. These projects consist of fifty-one seacoast cities and towns of the Commonwealth, and in these areas most of the salt marshes have been ditched except for certain sections of the North Shore between Cape Ann and the New Hampshire line. In this particular section much ditching has already been provided, but there are still breeding areas which should be ditched when funds are available. The state has made no appropriation for this construction work since the beginning of C.W.A. activities in the early winter of 1933-1934.

In the fifty-one communities mentioned above maintenance work is carried on annually under the direction of the State Reclamation Board. Funds for this work must be provided by the cities and towns concerned under assessments made annually by the Board. The money is deposited with the State Treasurer and expended at the direction of the Board. All labor is supplied by the towns in which the work is done and the actual supervision is carried on by field agents of the Reclamation Board. In the fiscal year 1939 the amount expended for maintenance work was \$29,158.40. This method of maintaining mosquito control ditching has proved to be a satisfactory one and has resulted in keeping the ditching in an effective condition.

Surveys for determining the source and means of control of the mosquito nuisance were made for some fifteen towns within the state during the year. These surveys were not always productive of action for in some cases the extent of the problem discouraged those interested. On the other hand these surveys have often resulted in increasing the effectiveness of mosquito control in certain communities and in the undertaking of control activities in others where the actual interest and enthusiasm had reached the point of providing funds for attacking the problem.

The officials of six cities and towns have requested surveys during the year for assistance in preparing proposals for W.P.A. projects on mosquito control drainage. In these cases the personnel of the Board has assisted in making out projects for the needed work, in making up the plans and in securing the approval of the state W.P.A. officials for the project. Under an arrangement with these officials all projects for W.P.A. mosquito control work are submitted to the Board before the funds are advanced. When the project is approved and put in operation the Board gives such field supervision as its field force permits.

During the year 1939 the Reclamation Board has given technical assistance to individuals who have undertaken mosquito control on their own property. In most cases such work has been limited to small operations benefiting principally the individuals concerned; yet one man has completed within the last year salt marsh drainage in an extremely bad breeding area involving a total expenditure of \$2500.00. This particular accomplishment has been of benefit, not only to the individual but to the whole community, and has been the incentive for undertaking further work on the part of the town.

Publicity on mosquito control has been given through special articles in the newspapers, radio broadcasts, and talks to Garden Clubs, Women's Clubs, and other organizations. The aim of this publicity has been to acquaint the public with the importance of the responsibility of the individual property owner in preventing on his own land the breeding of mosquitoes that may be the cause of a neighborhood nuisance. Emphasis was also made on the need of continuous public support of mosquito control activities undertaken by the community.

The Reclamation Board during the past year issued a revision of its bulletin, "The Mosquito in Massachusetts", and this bulletin was in considerable demand during the 1939 breeding season. The material in this bulletin is non-technical and is designed to acquaint the general public with the problems of mosquito control and the methods of procedure by which effective control of the pest may be carried on by communities.

